Note: This scope of work example may be downloaded from the U.S. Army Corps of Engineer's

Internet site at: ftp://ftp.sam.usace.army.mil./pub/op/opr/scopes

SCOPE OF WORK FOR SITE MANAGEMENT FOR DEBRIS REDUCTION RELATED TO [NAME/NATURE OF DISASTER] AT, IN, OR NEAR [LOCATION OF RECOVERY EFFORTS]

1.0 GENERAL

- 1.1 The purpose of this contract is to provide site management and reduction of debris generated as a result of [NAME OF DISASTER] in [DISASTER LOCATION; I.E. "North Carolina counties" or "Mobile and Baldwin Counties in Alabama"] which have been declared disaster areas by the President because of the effects of [NAME OF DISASTER].
- 1.2 The Contractor shall manage and operate the debris reduction site located at [SITE LOCATION]. The site is approximately [SIZE] acres in total area. An outline of the site location is shown in the attached map.
- 1.3 Contractor shall provide all management, supervision, labor, machines, tools and equipment necessary to accept, process, reduce, incinerate and dispose of disaster related debris. The debris to be processed consists primarily of burnable debris, with variable amounts of non-burnable included. Segregation of debris into various categories will be required.
- 1.4 Reduction of burnable debris shall be through air curtain incineration. [INCLUDE OR DELETE NEXT TWO SENTENCES] Reduction of burnable debris may also be accomplished through chipping/grinding. Reduction by this means, however, 1) must be at the same rate as indicated for incineration, and 2) disposal of the chips/mulch would be the responsibility of the Contractor, and 3) shall be done at no increased cost to the Government.

2.0 SERVICES

- 2.1 Contractor will establish lined temporary storage areas for ash, household hazardous waste, fuels and other materials that can contaminate soils, runoff or groundwater. Contractor shall set up plastic liners under stationary equipment such as generators and mobile lighting plants unless otherwise directed by the Contracting Officer's Representative (COR).
- 2.2 Contractor shall be responsible for establishing site layout.
- 2.3 Contractor will be responsible for traffic control, dust control, erosion control, fire protection, on-site roadway maintenance, and safety measures. The Contractor shall comply with local, tribal, State and Federal safety and health requirements.
- 2.4 Contractor shall manage the site to accept debris collected under other contracts. Contractor shall direct traffic entering and leaving the site, and shall direct dumping operations at the site.

- 2.5 Contractor shall be responsible for sorting and stockpiling of debris at the site. Debris shall be segregated into 1) burnable debris, 2) non-burnable debris, 3) household hazardous waste, and 4) ash residue. Further segregation of non-burnable debris, such as recyclable material or durable goods may be necessary. Debris classifications are defined in Section 3.0.
- 2.6 Contractor shall be responsible for disposal of non-burnable debris and ash residue. Non burnable debris and ash shall be hauled to [NAME OF SITE OR LANDFILL, *NOTE: SITE MUST HAVE SCALES.*] for disposal. [SELECT ONE OF THE FOLLOWING SENTENCES] Tipping fees will be [PRICE PER TON] and will be the responsibility of the contractor for payment. [OR] Tipping fees will be the responsibility of the government. Removal of household hazardous waste from the reduction site, including loading of household hazardous waste at the site, will be performed under a separate contract.
- 2.7 Upon completion of the debris reduction process, the Contractor will clear the site of all debris (excluding household hazardous waste) and restore the site to the satisfaction of the COR.
- 2.8 The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of Federal, State, tribal and local governments or agencies, or of any public utilities.

3.0 DEBRIS CLASSIFICATION

- 3.1 **Eligible Debris.** Debris that is within the scope of this contract falls under three possible classifications Burnable, Non-Burnable and Household Hazardous Waste.
- 3.2 **Burnable Debris.** Burnable debris includes all biodegradable matter except that included in the following definitions of other categories of debris. It includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs; untreated structural timber; untreated wood products and brush.
- 3.3 **Non-Burnable Debris.** Non-burnable debris includes, but is not limited to, treated timber; plastic; glass; rubber products; metal products; sheet rock; cloth items; non-wood building materials and carpeting. Some non-burnable debris is recyclable. Recyclable debris includes metal products (i.e. Mobile Trailer parts, Household appliances (White Metal), and similar items), or uncontaminated soil.
- 3.4 **Household Hazardous Waste (HHW).** Household hazardous wastes, such as petroleum products, paint products, etc., and known or suspected hazardous materials, such as asbestos, lead-based paint, or electrical transformers shall be removed by others. Coordination for hazardous debris removal is the responsibility of the Government. Known or suspected HHW that mistakenly enter the waste stream shall be placed in an appropriate storage area for removal by others.
- 3.5 **Stumps.** Tree stumps with base cut measurements less than 2 feet in diameter will be disposed of with the same methods used for other burnable debris. Tree stumps larger than 2 feet in diameter will be disposed of by either splitting and burning, or chipping/grinding. The method will be at the discretion of the Contractor.
- 3.6 **Ash**. Ash is the residue produced by incineration of the burnable debris. When handling ash, it will be required to "wet down" the ash to prevent dust problems.

3.7 **Chips/Mulch**. Chips and mulch are the end product of chipping or grinding wood products. Proper disposal of chips and mulch is to find environmentally friendly (non-landfill disposal) use for the material.

4.0 PERFORMANCE SCHEDULE

- 4.1 Immediately following Bid Opening, the apparent low bidder will meet with the COR to discuss matters of judgment, safety, quality control, coordination, payment, record keeping, and reporting.
- 4.2 **Schedule.** The Contractor shall begin preparation for mobilization immediately after Notice to Proceed and be fully operational within [HOURS] hours after Notice to Proceed.
- 4.3 **Production.** The Contractor is required to process a minimum of [RATE], [NOTE: MOST INCENERATORS BURN 150 TO 180 CY PER HOUR, ALLOW 4 HOURS DOWN TIME FOR SERVICE/ASH REMOVAL PER 24 HOURS] cubic yards of debris per calendar day. The minimum required reduction/disposal rate shall be achieved no later than the second calendar day after receipt of Notice to Proceed. This minimum production rate is increased to [INCREASED RATE] in the event that the Government exercises the option for additional reduction capacity. Liquidated damages shall be assessed at \$[AMOUNT] per calendar day for any day in which the minimum processing rate is not met, unless non-compliance is due to insufficient debris amounts being delivered to the site.
- 4.4 **Completion.** All work, including site restoration prior to close-out, shall be completed within [DAYS] calendar days after receiving notice from the COR that the last load of debris has been delivered, unless the Government initiates additions or deletions to the contract by written change orders. Subsequent changes in completion time will be equitably negotiated by both parties pursuant to applicable State and Federal law. Liquidated damages shall be assessed at \$[AMOUNT] per calendar day for any time over the maximum allowable time established above.

5.0 EQUIPMENT

- 5.1 The Contractor shall provide all equipment necessary to prepare the site, stockpile the debris, feed the air curtain incinerator(s), remove ash from the incinerator(s), load and haul for disposal all non-burnable debris and ash residue, and any other equipment which may be necessary for the performance of this contract. The Contractor shall comply with local, tribal, State and Federal safety and health requirements.
- 5.2 All equipment must be in compliance with all applicable Federal, State, tribal and local rules and regulations. All equipment and operator qualifications will meet the requirements of local, tribal, State and Federal safety and health requirements. The Contractor using the applicable inspection forms will inspect equipment prior to its use. The completed forms will be provided to the Government.
- 5.3 Prior to commencing debris reduction and disposal operations, the Contractor shall present to the Contracting Officer or his representative, the COR, for approval, a detailed description of all equipment to be used for debris handling, sorting, processing, incinerating, loading and hauling, stating brand name, model and horsepower, (including all air curtain incinerators).

- 5.4 Equipment which is designated for use under this contract shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled or processed for others with debris hauled or processed under this contract.
- 5.5 Reduction of burnable debris may be by either air curtain pit burning or portable air curtain incinerators. Section 6.0 specifies requirements for air curtain pit burning. Section 7.0 specifies requirements for portable air curtain incinerators.

[DELETE NEXT SECTION IF CHIPPING/GRINDING/MULCHING NOT ALLOWED IN CONTRACT]

5.6 Reduction of burnable wood debris may also be accomplished by chipping and grinding, provided the processing rate given in Section 4.3 can be maintained. Section 8.0 specifies requirements for chipping and grinding procedures.

6.0 AIR-CURTAIN PIT BURNING

[SELECT ONE OF THE NEXT TWO PARAGRAPHS AND DELETE THE OTHER, DEPENDENT UPON WHETHER THE PIT IS TO BE CONSTRUCTED ABOVE GROUND OR DUG DOWN, BASED ON WATER TABLE]

[BELOW-GRADE PIT; LOW WATER TABLE]

6.1 The air curtain pit burning method incorporates an earthen pit, constructed by digging below grade, and a blower. The blower and pit make up an engineered system that must be precisely configured to properly function. The blower must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. The pit configuration must have a precise width, depth and length to compliment the blower. The composition and operation of the air curtain pit incinerator(s) shall conform generally to the drawings in Figures 1, 2, and 3 of this scope of work.

[ABOVE-GRADE PIT; HIGH WATER TABLE]

- 6.1 The air-curtain pit burning method incorporates an earthen pit, constructed by building above grade, and a blower. The blower and pit make up an engineered system that must be precisely configured to properly function. The blower must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. The pit configuration must have a precise width, depth and length to compliment the blower. The composition and operation of the air-curtain pit incinerator(s) shall conform generally to the drawings in Figures 1, 2, and 3 of this scope of work.
- 6.2 Minimum required air velocity measured at the nozzle is 8,800 ft/min (100 mph). Minimum airflow rate measured at the nozzle is 900 cubic feet per min per linear foot of pit length. (As an example, a 20-ft long pit would require a blower with a nozzle velocity of 8,800 ft/min and nozzle output rate of 18,000 cfm. This example is intended for explanation purposes only, and does not imply a recommended pit length for actual operations.)
- 6.3 The pit should be a maximum of 8 feet wide, and should be from 12 to 20 feet deep. The actual pit dimensions should be such that the system functions properly.

- 6.4 Pits must be constructed out of a highly compactible material that will hold its shape and support the weight of the loading equipment. There shall be an impervious layer of clay or limestone on the bottom of the pit to provide a barrier for ground water protection. This layer shall be a minimum of 1 foot thick and be repaired as necessary after each ash removal operation.
- 6.5 There is to be a minimum distance of 100 feet between the burn area and the nearest debris piles. There is to be a minimum distance of 1,000 feet between the burn area and the nearest building. Contractors are responsible for assuring that the public and workers are kept a safe distance from the burn site.
- 6.6 The burn will be extinguished at least 2 hours before removal of the ash mound. Wetting of the ash will be necessary to reduce dust while removing ash.
- 6.7 The burn pits must be made of limestone or other highly compactable material and be capable of supporting the wheel weight of the loading equipment. There should be an impervious layer of clay or limestone on the bottom of the pit to attempt to seal the ash from the aquifer. This impervious layer should be at least 1 foot thick, and should be repaired or replaced if scraped by bulldozers, excavators, or other equipment.
- 6.8 The ends of the pits must be sealed with dirt ash or other material to a height of 4 feet.
- 6.9 A 12 inch dirt seal must be placed on the lip of the burn pit area to seal the blower nozzle. The nozzle should be 3 to 6 inches from the edge of the pit.
- 6.10 There should be 1 foot high warning stops running the length of the pits to alert equipment operators when they are close to the pit. The warning stops should be constructed of fireproof material.
- 6.11 No hazardous or contained-ignitable material is to be dumped into the pit.
- 6.12 The air flow should hit the wall of the pit at about 2 feet below the edge of the pit and the debris should not break the path of the air flow, except during dumping.
- 6.13 The length of the pit should be no longer than the length of the blower system, and the pit should be loaded uniformly along the length.
- 6.14 The contractor is responsible for ensuring that the public is protected from the burn operation. Signs, fences, and other measures can be used depending on site conditions.
- 6.15 Emissions must meet State and Federal standards for burning operations.
- 6.16 The Contractor shall be responsible for dust control while handling ash materials.

7.0 PORTABLE AIR CURTAIN INCINERATORS

- 7.1 Portable incinerators use the same principles as air curtain pit systems. The primary difference being portable incinerators utilize a pre-manufactured pit in lieu of an on-site constructed earth or limestone pit. The pits are engineered to precise dimensions to compliment the blower systems. The composition and operation of the air curtain pit incinerator(s) shall conform generally to the drawings in Figures 1 and 2 of this scope of work.
- 7.2 Minimum required air velocity measured at the nozzle is 8,800 ft/min (100 mph). Minimum airflow rate measured at the nozzle is 900 cubic feet per min (cfm) per linear foot of pit length. (As an example, a 20-ft long pit would require a blower with a nozzle velocity of 8,800 ft/min and nozzle output rate of 18,000 cfm. This example is intended for explanation purposes only, and does not imply a recommended pit length for actual operations.)
- 7.3 There is to be a minimum distance of 100 feet between the portable incinerator and the nearest debris piles. There is to be a minimum distance of 1,000 feet between the portable incinerator and the nearest building. Contractors must assure that the public and workers are kept a safe distance from the incinerator.
- 7.4 The burn will be extinguished at least 2 hours before removal of the ash.
- 7.5 There should be 1 foot high warning stops running the length of the pits to alert equipment operators when they are close to the pit. The warning stops should be constructed of fireproof material.
- 7.6 No hazardous or contained-ignitable material is to be dumped into the pit.
- 7.7 The contractor is responsible for ensuring that the public is protected from the burn operation. Signs, fences, and other measures can be used depending on site conditions.
- 7.8 Emissions must meet State and Federal standards for burning operations.
- 7.9 The Contractor shall be responsible for dust control while handling ash materials.

[DELETE ENTIRE NEXT SECTION IF CHIPPING/GRINDING NOT ALLOWED; IF THIS SECTION IS DELETED, REMAINING SECTION NEED TO BE RE-NUMBERED]]

8.0 CHIPPING AND GRINDING

- 8.1 If the Contractor chooses to use chipping/grinding as a method of debris reduction, it is the Contractor's responsibility to acceptably dispose of the chips or mulch, at no additional cost to the Government. Because the volume reduction achieved by chipping/grinding is not as great as the volume reduction achieved by incineration, disposal of the chips or mulch in a landfill is not an acceptable means of disposal. For disposal, the chips or mulch must be put to some benefit or use. The Contractor may provide or sell the chips or mulch to be recycled for use in agricultural mulch, fuel or wood products.
- 8.2 The average chip size produced will be dependent on the needs of the end user, but typically should not exceed 4 inches in length and ½ inch in diameter.

- 8.3 Contamination: Contaminates are all materials other than wood products. Contaminates must be held to 10% or less for the chips or mulch to be acceptable. Plastics should be eliminated completely. To help eliminate contaminates, root rake loaders should be used to feed or crowd material to the chipper/grinder. Bucket loaders tend to scoop up earth, which is a contaminate. The use of hand laborers must be utilized to pull out contaminates prior to feeding the chipper/grinders. The more contaminates, the more numerous the laborers. Shaker screens are required when processing stumps with root balls or when large amounts of soil are present in the vegetative debris.
- 8.4 Storage: Chips/mulch should be stored in piles no higher than 15 feet, and meet all State and local laws.

9.0 REPORTING

- 9.1 The Contractor shall submit a report to the COR no later than [TIME] each day. Each report shall contain, at a minimum, the following information:
 - a) Contractor's Name.
 - b) Contract Number.
 - c) Daily and cumulative totals of debris processed, to include method(s) of processing and disposal location(s).
 - d) Daily estimate of Household Hazardous Waste (HHW) debris segregated, and cumulative amount of HHW placed in the designated holding area.
 - e) Any problems encountered or anticipated.

10.0 SITE CONSIDERATIONS

- 10.1 Site Plan. The Contractor will provide a site operations plan for review and approval by the COR prior to beginning work. At a minimum, the plan will address the following:
 - a) Access to site
 - b) Site management, to include point-of-contact, organizational chart, etc.
 - c) Traffic control procedures
 - d) Site security
 - e) Site safety
 - f) Site layout/segregation plan
 - g) Hazardous waste materials plan
 - h) Environmental mitigation plan, including considerations for smoke, dust, noise, traffic, buffer zones, storm water runoff archeology, historic preservation, wetlands, endangered species as appropriate.
- 10.2 Site Preparation. The Contractor shall be responsible for preparing the site(s) to accept the debris. This preparation shall include clearing, erosion control, grading, construction and maintenance of haul roads and entrances. The Contractor shall provide utility clearances and

sanitation facilities, if needed. The Contractor shall protect existing structures at the sites and repair any damage caused by his operations at no additional cost to the Government.

- 10.3 Site Security. The Contractor shall be responsible for installing site security measures and maintaining security for his operations at the site.
- 10.4 Fire Protection. The Contractor shall manage the site to minimize the risk of fire.
- 10.5 Ash Containment Area. The Contractor shall be responsible for the storage, removal and containment of ash from all burning operations. The containment area will be "wetted down" periodically under this contract to prevent particles from becoming airborne.
- 10.6 Inspection Tower. The contractor shall construct an inspection tower. The tower shall be constructed using pressure treated wood. The floor elevation of the tower shall be 10 foot above the existing ground elevation. The floor area shall be 8' by 8', constructed of 2"x 8" joists, 16" O.C. with 3/4" plywood supported by four 6" x 6" posts. The perimeter of the floor area shall be protected by a 4 foot high wall constructed of 2" x 4" studs and 1/2" inch plywood. The floor area shall be covered with a corrugated tin roof. The roof shall provide a minimum of 6'-6" of headroom below the support beams. Wooden steps shall provide access with a handrail.
- 10.7 Traffic Control. The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. Contractor shall provide all flag persons, signs, equipment and other devices necessary to meet Federal, State, tribal and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. As a minimum, one flag person shall be posted at each entrance to direct traffic to the site.
- 10.8 Site Closure. The Contractor shall be responsible for the closure of the debris site within [INSERT] calendar days of receiving the last load of disaster-related debris. This closure shall include removal of site equipment, debris, and all remnants from the processing operation (such as temporary toilets, observation towers, security fence, etc.), and grading the site, and restoring the site to pre-work conditions. The site will be restored in accordance with all State, tribal and local requirements. The Contractor is responsible for the proper disposal of non-burnable debris, ash, and wood chips. Disposal of the HTW debris is not the responsibility of the Contractor under this contract. The Contractor shall receive approval from the COR as to the final acceptance of a site closure. Final payment shall be released to the Contractor upon acceptance by the Contracting Officer.

11.0 HOUSEHOLD HAZARDOUS WASTE (HHW) ISSUES

- 11.1 The Contractor will be required to construct a containment area at the reduction site. This containment area will consist of a earthen berm with a non-permeable soil liner. The HHW containment area must be covered at all times with a non-permeable cover.
- 11.2 Any material found that is classified as HHW shall be reported immediately to the designated COR. This material shall be segregated from the remaining debris using a method that will allow the remaining non-HHW debris to be processed. All HHW debris will be moved and placed in the designated HHW containment area.
- 11.3 Disposal of the HHW debris will be by separate contract.

12.0 CONTRACTOR HHW SPILLS

- 12.1 The Contractor shall be responsible for reporting to the COR and cleaning up all HHW spills caused by the Contractor's operations at no additional cost to the Government.
- 12.2 Immediate containment actions shall be taken as necessary to minimize effect of any spill or leak. Cleanup shall be in accordance with applicable Federal, State, tribal and local laws and regulations.
- 12.3 Spills other than on the site shall be reported to the National Response Center, and the Contracting Officer immediately following discovery. A written follow-up shall be submitted to the COR not later than 7 days after the initial report. The written report shall be in narrative form, and as a minimum shall include the following:
 - a. Description of the material spilled (including identity, quantity, manifest number, etc.).
 - b. Determination as to whether or not the amount spilled is EPA/State reportable, and when and to whom it was reported.
 - c. Exact time and location of spill, including description of the area involved.
 - d. Receiving stream or waters.
 - e. Cause of incident and equipment and personnel involved.
 - f. Injuries or property damage.
 - g. Duration of discharge.
 - h. Containment procedures initiated.
 - i. Summary of all communications the Contractor has had with press, agencies, or Government officials other than COR.
 - j. Description of cleanup procedures employed or to be employed at the site, including disposal location of spill residue.

13.0 OTHER CONSIDERATIONS

- 13.1 The Contractor shall supervise and direct the work, using qualified labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.
- 13.2 The Contractor must be duly licensed in accordance with the State's statutory and regulatory requirements to perform the work. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the COR.

13.3 The Contractor shall be responsible for correcting any notices of violations issued as a result of the Contractors or any subcontractors actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the Government

14.0 MEASURMENTS

- 14.1 Measurements of debris processed are based upon **Cubic Yard** measurements of debris delivered to the site.
- 14.2 Measurement of non-burnable debris and ash is based upon **Ton** measurements measured at the landfill or final disposal site.
- 14.3 All efforts required in mobilization, site set-up, site closeout and demobilization shall be considered as a total **Job**.

15.0 PAYMENT

- 15.1 Payment for all debris sorted, segregated, processed, reduced and disposed by burning will be made at the unit price per cubic yard.
- 15.2 Payment for managing and operating the debris sites; furnishing plant, material, labor, tools and equipment necessary to process/reduce/dispose of debris; and providing for traffic control, dust control, erosion control, inspection tower, lighting, ash containment, fire protection, permits, environmental monitoring, and safety measures; are all incorporated in the bidder's unit price for burning.
- 15.3 Payment for loading and hauling non-burnable debris to the final disposal site will be by the
- 15.4 The Contractor will be entitled to invoice for mobilization after all equipment is delivered to and operational at the work site. Demobilization cost will be due after all equipment is removed from the work site. Payment for mobilization and demobilization will be per job.
- 15.5 Payment for site preparation and site closure will be per job.

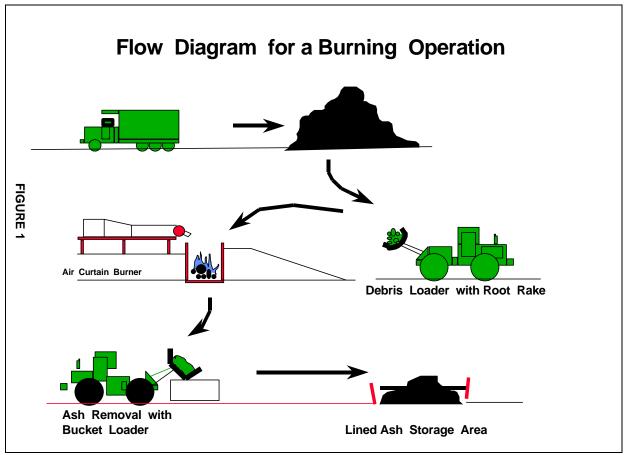


Figure 1

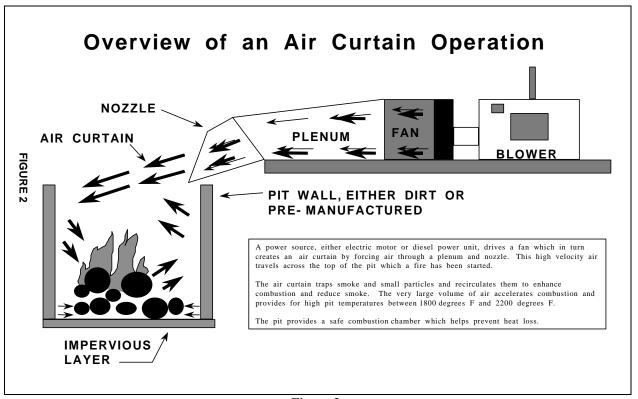


Figure 2

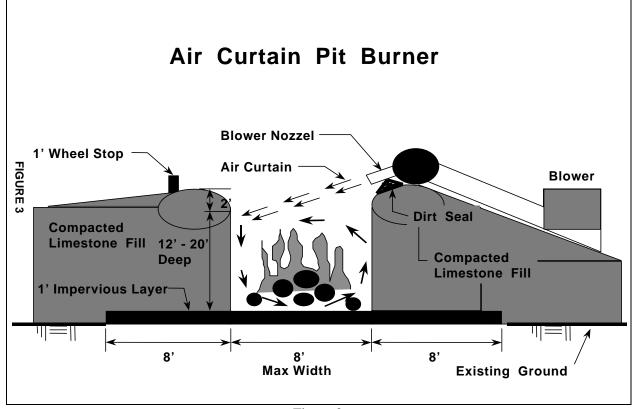


Figure 3

BIDDING SCHEDULE

CONTRACT NO.

ITEM	DESCRIPTION	QUANTITY	UNIT OF	UNIT	AMOUNT
			ISSUE	PRICE	
1.	Mobilization.	1	Job	XXX	\$
2.	Reduction of Burnable Debris through the Air Curtain Incineration.		CY	\$	\$
3.	Disposal of Non- Burnable Debris and Ash.		Ton	\$	\$
4.	Site Preparation and Site Closure.	1	Job	XXX	\$

[DELETE THE NEXT BID ITEM IF CHIPPING & GRINDING IS NOT ALLOWED IN THE CONTRACT.]

5.	Reduction of Burnable		CY	\$	\$
	Debris by Chipping and				
	Grinding.				
6.	Reduction of Stumps		Stump	\$	\$
	greater than 24" in				
	diameter, but less than 36"				
	in diameter.				
7.	Reduction of Stumps		Stump	\$	\$
	36" in diameter, but less				
	than 48" in diameter.				
8.	Reduction of Stumps		Stump	\$	\$
	48" in diameter or greater.		_		
9.	Demobilization.	1	Job	XXX	\$